Journal of Agricultural Science (2011), **149**, 103–117. © *Cambridge University Press* 2010
doi:10.1017/S0021859610000547

A participatory approach to the evaluation of the efficiency of animal recording practices based on institutional analysis and development framework

C. B. WASIKE[1,2]*, A. K. KAHI[3] AND K. J. PETERS[1]

[1] *Department of Animal Breeding in the Tropics and Subtropics, Humboldt University of Berlin, Philippstrasse 13, Haus 9, 10115 Berlin, Germany*
[2] *Department of Animal Sciences, Pwani University College, PO Box 95, 80108 Kilifi, Kenya*
[3] *Animal Breeding and Genetics Group, Department of Animal Sciences, Egerton University, PO Box 536, 20115 Egerton, Kenya*

(*Revised MS received 7 April 2010; Accepted 10 May 2010; First published online 27 July 2010*)

SUMMARY

Animal recording is an interactive process that involves several practices. The efficiency of the process is essential to ensure the utility of outcomes necessary for sustainable participation. Most evaluation approaches define efficiency in economic terms. Animal recording systems lack outputs of direct economic benefits; hence, efficiency evaluation based on utility derived from the records would be more laudable. In that case, a system is considered efficient when outcome-utility-dependent participation is sustained. Approaches for evaluating efficiency based on the utility of outputs are, however, unavailable. The current study presents an approach for evaluating the efficiency of animal recording based on output utility using the institutional analysis and development framework. The approach evaluates efficiency by incorporating institutional issues influencing the operations of the system and its outcomes. It considers animal recording as an action arena with various actors in three action situations, namely: animal identification and registration, pedigree and performance recording and animal evaluation and information utilization. The variables include the positions occupied by actors, their actions, the outcomes associated with the actions, the level of control over choice, available information and the cost and benefits of engagement. As an interactive process, animal recording has rules that order relationships between actors. It also exists within a biophysical system and community whose attributes, combined with the rules, influence the actions and outcomes of recording. These are evaluated by looking at rule formation structures, enforcement and compliance and the level of interaction between the recording system and other biophysical characteristics and the community for their effects on outcomes, their utility and sustainability of recording. Participatory tools, Stakeholder matrix and Venn diagrams are used to identify the variables, quantify their interactions and link them to outputs. The applicability of the approach is tested using a case where information systems are imperfect. The approach successfully identifies missing actors within the action arena, poor rule conformance due to weak enforcement agencies and the absence of rules that govern outcomes and ensure the utility of outcomes as hindrances to the utility of recording and hence the efficiency of the system. It may therefore be used to evaluate the efficiency of systems whose outputs do not have a direct market value and in situations where quantitative market information is scarce.

INTRODUCTION

Animal recording is a systematic process that leads to outcomes that facilitate a comparison of production alternatives, the availability of baseline information on the performance of animals, animal management decisions and genetic improvement that are beneficial to the governments and policy-makers, farmers and by extension the consumers (FAO 1998). This process involves collection of data on identified animals and processing it into information for use in

* To whom all correspondence should be addressed. Email: wasikebwire@yahoo.co.uk